REMARKS

Claims 1-13 are pending in the application. Claim 13 has been amended. Applicants submit that no new matter has been added to the application by the Amendment.

Applicants respectfully request that the Amendment After Final be entered in accordance with 37 CFR §116 and MPEP 714.13 since: (1) no new matter has been added to the application by the Amendment; (2) the Amendment resolves all issues raised by the Examiner in the Final Office Action; (3) the subject matter of the Amendment already has been included in the Examiner's search and therefore does not require the Examiner to perform further searching; (4) the Amendment places the application in condition for allowance or in better form for appeal and (5) the Amendment does not result in a net addition of claims to the application.

Claim Rejections – 35 U.S.C. § 101

The Examiner rejected claim 13 as being directed to non-statutory subject matter. Applicants have amended claim 13 to recite a practical application of the code that produces a tangible result. Accordingly, Applicants respectfully request reconsideration and withdrawal of the § 101 rejection of claim 13.

The Present Invention

As described at paragraphs [0083] to [0089] of the application, an embodiment of the present invention initially accelerates the shifting of a focusing section toward a new layer and then as the new layer is approached, decelerates the shifting of the focusing section. The deceleration is performed in two phases: an initial phase of deceleration performed at a first acceleration and a second phase of deceleration performed at a second acceleration, where the second acceleration is smaller than the first acceleration.

In Figs. 4A and 4B of the application, there are shown plots of the velocity of the focusing section over intervals X and Y. Interval X includes a period of increasing velocity, i.e. acceleration, at the beginning of the shifting of the focusing section from one layer to the next, followed by a period of constant velocity. In the interval X, the period of constant velocity is

followed by the initial phase of reducing the velocity, i.e. deceleration at the first acceleration. Interval Y shows the second phase of deceleration performed at the second acceleration. Examining the slopes of the velocity profiles of Figs. 4A and 4B (i.e. acceleration) in the intervals X and Y one can see that the absolute value of the acceleration, during the deceleration phase in the interval Y is less than the absolute value of acceleration during the deceleration phase in the interval X.

The control signals for causing the period of acceleration and for causing the deceleration at the first and the second accelerations are shown in Figs. 5, 6 corresponding to the velocity profile of Fig. 4A, and in Fig. 9, corresponding to the velocity profile of Fig. 4B. Specifically, in Fig. 6, which corresponds to shifting the focus section out from the disc, there is shown in interval X an acceleration pulse of negative polarity corresponding to the acceleration period and a positive pulse corresponding to the initial deceleration phase. This is followed in interval Y by alternating positive pulses of a first type which increase the second acceleration and negative pulses which decrease the second acceleration (see paragraph [0100]).

Similarly, as shown in Fig. 9, and described in paragraph [0117], which describe a procedure for shifting the focus section into the disc, there is shown in interval X an acceleration pulse of positive polarity corresponding to the acceleration period and a negative pulse corresponding to the initial deceleration phase. This is followed in interval Y by alternating negative pulses of a first type which increase the second acceleration and positive pulses which decrease the second acceleration.

Claim Rejections – 35 U.S.C. § 102

The Examiner rejected claims 1-13 as being anticipated by U.S. Patent Application Publication No. 2004/0202084 A1 (Manoh et al.). Applicants respectfully traverse the rejection.

Claim 1 recites, *inter alia,*

> *a control section which generates a control signal such that the focal point of the light being shifted toward the data storage layer is decelerated initially at a first acceleration and then at a second acceleration, the absolute value of the*

second acceleration being smaller than that of the first acceleration and the control signal for decelerating the focal point of the light at the second acceleration at least includes a first type of pulses that increases the acceleration and a second type of pulses that decreases the acceleration, respectively.

Note that claim 1 is directed to only the deceleration phase of the shifting operation, although the terms "acceleration" are used generically to describe the deceleration of the focus section during the deceleration phase.

Manoh et al. is directed to a method of shifting a focus section from a first layer to a second layer. In Fig. 11C there is shown the drive signal for accomplishing the jump operation. Pulse ACCE is a positive polarity pulse that is the drive signal for increasing the velocity, i.e. accelerating the shifting of the focus section from a first layer to a second layer. Pulse OECCE (DECCE in the specification) is a negative polarity pulse which is the drive signal for reducing the velocity, i.e. decelerating the focus section as it approaches a second layer. Pulse ACCE is not a control signal for decelerating the focus section since, according to paragraph [0114] of Manoh et al., pulse ACCE is used to accelerate the objective lens in the focus direction. Accordingly, Fig. 11C, by disclosing only a single decelerating pulse, discloses decelerating the focus section at only a first acceleration and does not teach, suggest or disclose decelerating the focus section at a second acceleration following the first acceleration of the deceleration phase, where the absolute value of the second acceleration is smaller than the first acceleration, as recited in claim 1. Nor does Manoh et al. disclose a control signal for decelerating the focal point during a second acceleration of the deceleration phase that includes a first type of pulses that increase the second acceleration and a second type of pulses that decrease the second acceleration, as recited in claim 1.

In view of the above, Applicants submit that Manoh et al does not anticipate claim 1. Accordingly, Applicants respectfully request reconsideration and withdrawal of the § 102 rejection of claim 1.

Claims 11, 12 and 13, which include the same patentable subject matter as claim 1, are allowable over Manoh et al. for the same reasons that claim 1 is allowable. Further, claims 2-10

are allowable over Manoh et al., at least by their dependency on allowable claim 1. Accordingly Applicants respectfully request reconsideration and withdrawal of the § 102 rejection of claims 2-13.

Claim Rejections – 35 U.S.C. § 103

In an alternate rejection, the Examiner rejected claims 1-13 as being unpatentable over U.S. Patent No. 6,370,093 (Tada et al.).

In respect to claim 1, the Examiner states that Tada et al. discloses a control section that - generates a control signal such that the focal point of the light being shifted toward the data storage layer is decelerated initially at a first acceleration [Vbrk1] and then at a second acceleration [Vbrk2], the absolute value of the second acceleration being smaller [Fig. 18D] than that of the first acceleration. The Examiner further states that Tada et al. discloses a second type of pulses [Fig. 18C] that decreases the acceleration [col. 12, line 46 to col. 13, line 23; col. 16, line 36 to col. 17. line 8]. Applicants respectfully traverse the rejection.

Claim 1 recites, *inter alia,*

> *a control section which generates a control signal... the control signal for decelerating the focal point of the light at the second acceleration at least includes a first type of pulses that increases the acceleration and a second type of pulses that decreases the acceleration, respectively.*

Tada et al. at col. 12, line 46 to col. 13, line 23 describes only the existence of a focus jump circuit by reference to block diagrams of Figs. 7 and 8 and does not describe any features of the control signal for controlling the focus jump circuit.

Figs. 18C and 18D and col. 16 lines 36-64 teach a deceleration pulse train in which the series of deceleration pulses [Fig. 18C] are of a single polarity which have the effect of monotonically decreasing the velocity of the objective lens [Fig. 18D] such that the velocity of the objective lens is successively reduced to zero as it approaches of the target layer. Thus Taba et al. at cols. 16 -17 and Figs 17-18 discloses only a series of pulses of a second type that reduce

the acceleration of the objective lens and does not disclose a second type of pulses that increase the acceleration of the focal point as recited in claim 1. The Examiner also refers to col. 16, line 65 to col. 17, line 68 and Figs 19 and 20 for disclosing pulses Vbrk1 and Vbrk2. However, Fig. 20 discloses only the two types of pulses during the interval of second acceleration and does not teach or suggest a deceleration at a first acceleration preceding deceleration at a second acceleration. Claim 1, on the other hand, recites deceleration at a first acceleration and then at a second acceleration where the second acceleration includes two types of pulses.

The Examiner admits that Tada et al. does not teach two acceleration pulses but states that changing the magnitude of the acceleration pulses would be obvious in order to achieve the predictable result as justified by comparing Applicants Fig. 4B to Tada et als. Fig. 18D. Applicants strongly disagree with the Examiner's conclusion.

In the first instance, Applicant's Fig. 4B clearly shows an interval of shifting where the velocity is negative during the period of deceleration, whereas Fig. 18D shows only a positive velocity during deceleration. One of ordinary skill would clearly understand that the interval of negative velocity can be caused only by an acceleration which is opposite to that occurring during intervals of positive acceleration. Thus, the Examiner's comparison of figures only goes to prove the distinguishing features of claim 1 over Tada et als. teachings.

Further, even if it were obvious in light of the teachings of Tada et al. to change the magnitude of the acceleration pulses to achieve a predictable result, as stated by the Examiner, that would still not lead one of ordinary skill in the art to provide two types of pulses, one of which would increase acceleration and the other to decrease acceleration.

Applicants submit that the Examiner has merely made a conclusory statement that the result of having pulses that increase and decrease the acceleration is predictable without providing any teachings from the prior art or the state of the art that would evidence same.

The Examiner has failed to articulate reasoning for: (1) combining prior art elements according to known methods to obtain a predictable result; (2) substituting one element for another to obtain a predictable result; (3) using a known technique to improve a similar device in

the same way; (4) applying a known technique to a known device to yield predictable results; (5) choosing from a finite number of identified predictable solutions; (6) adopting a known work from an alternate field or (7) modifying the prior art references based on a teaching, suggestion or motivation in the prior art to modify the references.

Claim 1 recites a control signal for decelerating the focal point of the light at a first acceleration and then at a second acceleration, where the second acceleration includes a first type of pulses that increases the acceleration and a second type of pulses that decreases the acceleration.

None of the embodiments disclosed by Tada et al. disclose, teach or suggest a control signal for decelerating a focus section which includes both a first period of acceleration and a second period of acceleration which includes both pulses that increase the acceleration and pulses that decrease the acceleration.

Applicants submit that Tada et al does not make claim 1 obvious. Accordingly, Applicants respectfully request reconsideration and withdrawal of the § 103 rejection of claim 1.

Claims 11, 12 and 13 include the same patentable features as claim 1 and thus are allowable over Tada et al. for the same reasons that claim 1 is allowable. Further, claims 2-10 are allowable over Tada et al., at least by their dependency on allowable claim 1. Accordingly Applicants respectfully request reconsideration and withdrawal of the § 103 rejection of claims 2-13.

Conclusion

Insofar as the Examiner's objections and rejections to claims 1-13 have been fully addressed, the instant application including claims 1-13 is in condition for allowance. Withdrawal of the Final Rejection, formal entry of the present "Amendment After Final," and issuance of a Notice of Allowability of claims 1-13 is therefore earnestly solicited.

Respectfully submitted,

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